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THE EXPERIMENTAL INFECTION OF TICKS WITH BRUCELLOSIS UNDER LABORATORY CONDITIONS.

Preliminary Report *

A.A.ZOTOVA and K.S.BOLDIGINA

At the Laboratory of Parasitology of the Kazakhstan Branch of the Academy of Sciences USSR, under its program of work on the problem of the transmission of Brucellae, the authors undertook the experimental infecting of Hyalomma ticks with brucellosis.

Tests with Hyalomma Marginatum

Fifty-two gorged females were taken at different times from guinea pigs suffering from brucellosis; from twenty of them, the contents of the gut were taken with a Pasteur pipette and used to inoculate a culture medium. Guinea pigs were injected with an emulsion from ticks macerated in physiological solution and filtered through cotton. The emulsion was injected subcutaneously into healthy guinea pigs, in the ventral region. Three groups of guinea pigs were infected in this way.

Group I (Nos. 1, 2, 3, 4, 5, 6) was injected with emulsion made with three ticks per guinea pigs.

Group II (Nos. 7, 8, 9, 10) was injected with emulsion from the organs of five ticks per guinea pigs.

Group III (Nos. 11, 12, 15) was injected with emulsion from ticks which had been kept for twenty-four hours after their removal from the host animal.

Group IV (Nos. 1, 2) comprises individuals infected with emulsion from larvae obtained from an experimentally infected female.

The blood serum of all the animals treated with the emulsion from

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The article is a report on initial experimental results which are in no way sufficient to permit conclusions to be drawn; it is being published because of one of the authors' (A.A.ZOTOVA) transferring to other work. (Editor.)

the infected ticks was tested several times for brucellosis by Wright's agglutination reaction. Guinea pigs Nos. 2, 3, 4, 5, 6, 7, 8, 10, 11, 15 were sacrificed and various organs given a bacteriological examination.

Results of Tests

i) A pure culture of *Brucella melitensis* was obtained from the media in the case of one tick, the emulsion from the organs of which was injected into guinea pig No. 4. In the case of the other tick, no brucellae were found in the media.

ii) The sera of nine guinea pigs gave a positive Wright agglutination reaction and only one animal (No. 8) gave a negative reaction.

iii) Culture-media prepared from the organs of the nine (Sic) sacrificed guinea pigs yielded a culture of *Brucella* in five cases, with the serum agglutination titer varying between limits 1:800 to 1:3200.

iv) The sera of guinea pigs Nos. 1 and 2, infected from larvae taken from infected female ticks, gave negative results in the Wright agglutination reaction.

Tests with the Ticks *Hyalomma Savignyi*

From the blood of twenty out of eighty gorged female ticks taken from guinea pigs suffering from brucellosis, a culture was made on a nutritive medium. An emulsion of the organs of the ticks was used to infect nine guinea pigs, of which six succumbed on the third to fifth day, before they were tested for brucellosis. Serum from three guinea pigs (Nos. 25, 26, 28) was tested for brucellosis by the agglutination reaction, with the following results:—

1) Serum from guinea pig No. 28 gave a positive reaction in the Wright test for brucellosis, while serum from guinea pigs Nos. 25 and 26 gave negative results.

2) The cultures made from the ticks yielded no brucellae.